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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/011,543	12/05/2001	Michael J. Haji-Sheikh	76183.2200	7728

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EXAMINER

AURORA, REENA

ART UNIT	PAPER NUMBER
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2862

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/011,543

Applicant(s)

HAJI-SHEIKH ET AL.

Examiner

Reena Aurora

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 33 –38 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura (4,616,281).
3. As to claims 33 – 38, Nakamura discloses a displacement detecting apparatus including magnetoresistive elements having at least a first set of runners (63a, 63b) and at least a second set of runners (64a, 64b) adjacent to the moving member (60), the first set of runners (63a, 63b) and the second set of runners (64a, 64b) configured as a wheatstone bridge (61), the wheatstone bridge generating at least an output signal (69) as the member (60) moves and as a magnetic field associated with the member electrically influences at least one of the first and second set of runners (Fig. 17 and 18, Column 7, line 45 – Column 8, line 9).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 – 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroeder et al. (5,754,042) in view of Nakamura (4,616,281).

6. As to claims 1 – 12, Schroeder et al. (hereinafter referred to as Schroeder) discloses an apparatus for detecting precise angular positions of a rotating object wherein a variable magnetic field is being generated by the moving member (50); and first MR (60) and second MR (62) is introduced adjacent to the moving member (50) such that a phase difference exists between the signals of the two MR's (Fig. 10, Column 5, Lines 51 - 63). Schroeder fails to disclose each of the first and second bridge having a first and second set of runners being electrically influenced by the magnetic field. Nakamura discloses a displacement detecting apparatus including magnetoresistive elements having a bridge circuit (61) including a first set of runners (63a, 63b) and second set of runners (64a, 64b) (Fig. 17 and 18, Column 7, line 45 – Column 8, line 9). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the device of Schroeder in view of Nakamura to provide for a first and second set of runners for a bridge circuit so as to be able to generate a differential output signal from a junction point between the first and the second bridge circuits.

7. As to claims 13 – 32, Schroeder discloses an apparatus for detecting precise angular positions of a rotating object as explained above. Schroeder further discloses a first MR (24) and second MR (26) configured to generate a first and second output signal in the presence of variable magnetic field (12) such that a phase difference exists between the signals of the two MR's (Fig. 6 and 7, Column 4, Lines 15 - 26). Schroeder

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fails to disclose each of the first and second bridge having a first and second set of runners being electrically influenced by the magnetic field. Nakamura discloses a displacement detecting apparatus including magnetoresistive elements having a bridge circuit (61) including a first set of runners (63a, 63b) and second set of runners (64a, 64b) (Fig. 17 and 18, Column 7, line 45 – Column 8, line 9 and Column 7, line 45 – Column 8, line 9). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the device of Schroeder in view of Nakamura to provide for a first and second set of runners for a bridge circuit so as to be able to generate a differential output signal from a junction point between the first and the second bridge circuits.

#### ***Prior Art of Record***


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
9. Davis, Jr. et al. (3,644,825) is cited for its disclosure of a magnetic detection system for detecting movement of an object utilizing signals derived from two orthogonal pickup coils.
10. Bajat et al. (5,243,279) is cited for its disclosure of an angular position detector employing magnetoresistors positioned in pairs at an electrical angle of one hundred and eighty degrees
11. Marx et al. (6,433,535) is cited for its disclosure of an arrangement for and method of detecting the angle of rotation of a rotatable element.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reena Aurora whose telephone number is 703-605-1372. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 703-305-4816. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3432 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
Reena Aurora  
March 20, 2003

  
EDWARD LEFKOWITZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800